

July 3, 2000

Mr. William Russell  
400 Plantation Lane  
Stevensville, MD 21666

Dear Mr. Russell:

At the recent NRC Regulatory Information Conference you submitted a written question regarding the development of the Significance Determination Process. I would like to respond in writing. From the comment card we understand your question/comment to be:

"Have you considered use of historical data to evaluate significance determination process? Examples include: Accident Sequence Precursor Data, Enforcement Actions and Significant Events. Use of CY 1995-98 would provide useful data and a test of the revised process. This could be used in inspector/staff training to show need for change and benchmark of revised process. I believe you would confirm the following 1) Past enforcement was not risk informed, 2) Reactor Cornerstone Measures at Power (SDP and ASP) are consistent, 3) Reactor shutdown events (ASP) are significant contributors (numbers and number of events) and SDP may not adequately capture shutdown events, and 4) common mode failures (FME in sumps) (design errors) for accident mitigation is significant precursors with high numbers."

Yes, we have used historical data to evaluate the SDPs. The development of all SDPs included a feasibility review that put past inspection findings through the SDP and evaluated how these findings would be addressed had they occurred under the new reactor oversight process. For the reactor safety SDP, this feasibility review is discussed in SECY-99-007A, "Recommendation for Reactor Oversight Process Improvements (Followup to SECY-99-007)," and included consideration of significant enforcement actions. The reactor safety SDP assumes that a degraded condition exists during plant operation for a specified time period and estimates the increase in core damage frequency that results from this condition. Conversely, an event is given a risk characterization that is an estimate of the probability of core damage given the occurrence of the event, including any known equipment failures. Should an actual event reveal degraded equipment, functions, or procedures caused by deficient licensee performance, the associated inspection findings become the input to the SDP and are characterized according to their contribution to increased core damage frequency over the time they are assumed to have existed. Therefore, the estimated significance of an event (in terms of core damage probability) is used by the staff to help determine the appropriate level of immediate inspection followup. The associated inspection findings representing deficient licensee performance issues are then "colored" by the SDP and considered by the NRC along with other inspection and PI results in evaluating plant performance and for determining the Regulatory response.

In addition, the use of event risk significance determination in this manner was also given a feasibility review as discussed in SECY-00-049, "Results of the Revised Reactor Oversight Process Pilot Program," and is being formalized in NRC Management Directive 8.3, "Incident Response."

We found that these feasibility reviews provided a useful benchmark for the new SDP and prompted several improvements while still validating the general effectiveness of the concept. The four comments you have noted are consistent with our observations that resulted from these feasibility reviews. The need for a shutdown SDP had been acknowledged early in the development process and we currently have provided an initial screening checklist for inspector use. Work is progressing on a more detailed plant specific process for determination of shutdown risk.

We appreciate your attendance and participation at forums such as the Regulatory Information Conference and look forward to a continuing dialogue as we move forward with initial implementation of the new reactor oversight process.

Sincerely,

***/RA by Jon Johnson Acting For/***

Samuel J. Collins, Director  
Office of Nuclear Reactor Regulation

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**\*See previous concurrences**

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